

**REMARKS**

Claims 18-32 are currently pending in the subject application, and are presently under consideration. Claims 18, 19, 22, 23, 25-27, and 29-31 are rejected. Claims 20-21, 24, 28, and 32 have been indicated as allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. New claim 33 has been added. Favorable reconsideration of the application is requested in view of the amendments and comments herein.

**I. Rejection of Claims 18, 19, and 22 Under 35 U.S.C. §103(a)**

Claims 18, 19, and 22 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Publication No. 2003/0215200 to Yokokawa, et al. ("Yokokawa") in view of U.S. Patent No. 6,363,087 to Rice ("Rice"). Withdrawal of this rejection is respectfully requested for at least the following reasons.

With regard to claim 18, in the Office Action dated August 10, 2010 (hereinafter "Office Action"), the Examiner rejects claim 18 based on the core regions of the fiber described in Yokokawa, stating that the fiber of Yokokawa incorporates radially dependent amounts of dopant material and selected transparent oxides that are selected to provide a measure of independent control over both a desired refractive index profile and a desired radially dependent Raman gain coefficient profile, as recited in claim 18 (Office Action, page 3; citing Yokokawa, FIGS. 4A and 4B; paragraph 58). Specifically, the Examiner states that "GeO<sub>2</sub> doping in #111 influences Raman gain, F doping in #112 influences index," (Office Action, *Id.*). Representative for Applicant respectfully disagrees. Yokokawa describes an optical fiber having three separate core regions with three separate refractive index profiles (Yokokawa, FIGS. 4A and 4B, paragraph 58). Yokokawa discloses that the optical fiber achieves the disclosed refractive index profile by using silica glass (e.g., GeO<sub>2</sub>), in the first and third core regions, and by incorporating F as a dopant in the second core region (Yokokawa, paragraph 58).

Representative for Applicant respectfully submits that the manner in which the optical fiber of Yokokawa is doped does not provide a measure of independent control over both a

desired refractive index profile and a desired radially dependent Raman gain coefficient profile, as recited in claim 18. Specifically, Yokokawa specifically discloses the effect on the refractive index profile of the respective  $\text{GeO}_2$  and F dopants. Yokokawa fails to disclose that the core regions have more than one dopant each. Yokokawa also fails to disclose a specific Raman gain profile, and likewise fails to disclose the effects of the  $\text{GeO}_2$  and F dopants on a Raman gain profile other than that the optical fiber does experience Raman gain (Yokokawa; paragraphs 38 and 78). As is known in the art and as acknowledged by the Examiner, the dopant  $\text{GeO}_2$  has an effect on Raman gain for a given optical fiber. However, the Examiner fails to address that the refractive index profile of FIG. 4B is based on the  $\text{GeO}_2$  dopant. Thus, the Examiner's statement that " $\text{GeO}_2$  doping in #111 influences Raman gain," is not appreciative of the fact that the  $\text{GeO}_2$  doping also influences the refractive index of the fiber of Yokokawa. Therefore, a change in the  $\text{GeO}_2$  dopant of the first core region of the fiber of Yokokawa would not only affect the Raman gain of the fiber, but would also affect the refractive index profile of the fiber, as indicated in FIG. 4B of Yokokawa. Accordingly, the dopants described in Yokokawa do not provide a measure of independent control over both a desired refractive index profile and a desired radially dependent Raman gain coefficient profile, as recited in claim 18.

With reference to the decision rendered by the Board of Appeals and Interferences (BPAI), the BPAI reversed the rejection of claim 5, now canceled and incorporated as part of claim 18, by stating that "claim 5 requires the use of more than one dopant to effect the recited 'measure of independent control,'" and that "[i]f only one dopant is present in the core, there cannot be a balancing of concentrations," (BPAI Appeal 2009-001005). While Yokokawa discloses more than one dopant for the glass portion 110g of the optical fiber, Yokokawa fails to disclose that any one core region includes more than one dopant, such as to allow the independent control of the refractive index profile and the Raman gain profile recited in claim 18. Therefore, the dopants of the optical fiber of Yokokawa cannot exhibit independent control over both a desired refractive index profile and a desired radially dependent Raman gain coefficient profile, as recited in claim 18.

For all of these reasons, Yokokawa fails to teach or suggest incorporating radially dependent amounts of dopant material and selected transparent oxides that are selected to provide a measure of independent control over both a desired refractive index profile and a desired radially dependent Raman gain coefficient profile, as recited in claim 18, to one of ordinary skill in the art. The addition of Rice fails to cure the deficiencies of Yokokawa to teach or suggest claim 18 to one of ordinary skill in the art. Therefore, neither Yokokawa nor Rice, individually or in combination, teach or suggest claim 18 to one of ordinary skill in the art. Withdrawal of the rejection of claim 18, as well as claims 19 and 22 which depend therefrom, is respectfully requested.

## **II. Rejection of Claims 23, 25, 26 and 29-31 Under 35 U.S.C. §103(a)**

Claims 23, 25, 26 and 29-31 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yokokawa and Rice in view of WO 02/50964 A2 to Clarkson ("Clarkson"). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Regarding claims 23 and 30, claims 23 and 30 recite a fiber comprising a core having a longitudinal optical axis and incorporating radially dependent amounts of dopant materials and selected transparent oxides that are selected to provide a measure of independent control over both a desired refractive index profile and a desired Raman gain coefficient profile. For the reasons described above, Yokokawa fails to teach or suggest incorporating radially dependent amounts of dopant material and selected transparent oxides that are selected to provide a measure of independent control over both a desired refractive index profile and a desired radially dependent Raman gain coefficient profile, as recited in claims 23 and 30, to one of ordinary skill in the art. The addition of Rice and/or Clarkson fails to cure the deficiencies of Yokokawa to teach or suggest claims 23 and 30 to one of ordinary skill in the art. Therefore, Yokokawa, Rice, and Clarkson, individually or in combination, fail to teach or suggest claims 23 and 30 to one of ordinary skill in the art. Withdrawal of the rejection of claims 23 and 30, as well as claims 25-27 and 29 and claim 31 which depend therefrom, respectively, is respectfully requested.

**III. Rejection of Claim 29 Under 35 U.S.C. §103(a)**

Claim 29 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Yokokawa and Rice in view of Clarkson as outlined in the rejection of Claim 22. Claim 29 depends from claim 23. As described above, Yokokawa, Rice, and Clarkson, individually or in combination, fail to teach or suggest claim 23 to one of ordinary skill in the art. Therefore, Yokokawa, Rice, and Clarkson, individually or in combination, fail to teach or suggest claim 29 to one of ordinary skill in the art. Withdrawal of the rejection of claim 29 is respectfully requested.

**IV. Rejection of Claim 27 Under 35 U.S.C. §103(a)**

Claim 27 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Yokokawa, Rice, Clarkson and further in view of U.S. Publication No. 2003/0161361 to Paldus, et al. ("Paldus"). Claim 27 depends from claim 23. As described above, Yokokawa, Rice, and Clarkson, individually or in combination, fail to teach or suggest claim 27 to one of ordinary skill in the art. The addition of Paldus fails to cure the deficiencies of Yokokawa, Rice, and/or Clarkson to teach or suggest claim 23 to one of ordinary skill in the art. Therefore, Yokokawa, Rice, and Clarkson, individually or in combination, fail to teach or suggest claim 27 to one of ordinary skill in the art. Withdrawal of the rejection of claim 27 is respectfully requested.

**V. New Claim 33**

New claim 33 depends from claim 18 and recites that the core comprises a single core region incorporating both the radially dependent amounts of dopant material and the selected transparent oxides at each given radius from the longitudinal optical axis. None of the cited art teaches or suggests new claim 33 to one of ordinary skill in the art. Consideration and allowance of new claim 33 is respectfully requested.

**CONCLUSION**

In view of the foregoing remarks, Applicant respectfully submits that the present application is in condition for allowance. Applicant respectfully requests reconsideration of this application and that the application be passed to issue.

Please charge any deficiency or credit any overpayment in the fees for this amendment to our Deposit Account No. 20-0090.

Respectfully submitted,

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